ALLIANCE
Technologies Corporation

Ciba Geigy
received
9 May 91 pcn
TRC/T6
9012003-0A

May 3, 1991

Mr. Dennis Gagne
Regional Sample Control Custodian
U.S. Environmental Protection Agency
90 Canal Street
Boston, MA 02114

Re: 68-W9-0033
Work Assignment 06-1JZZ
Case 15474, SDG AY742
Gulf South Environmental Laboratory
Ciba-Geigy
Volatiles: 4/Soil; 4/Water; AY741-AY748
Semivolatiles: 4/Soil; 4/Water; AY741-AX748
Pesticide/PCBs: 4/Soil; 4/Water; AY741-AY748

Dear Mr. Gagne:

The following is a Data Validation Report for case 15474, which was generated by QuantaLex, TRCC's Data Validation Sub-Contractor. The organic analytical data for this case contained low and medium level soil and water samples which were collected by Alliance Technologies Corp. at the Ciba-Geigy Site and analyzed by Gulf South Environmental Laboratories.

If you have any questions, please feel free to contact me at (508) 970-5600 X 4201.

Sincerely,

Cynthia S. Fortin

Cynthia S. Fortin
Data Validation Coordinator

encl.

CSF/er

cc: Debra Szaro/Moira Lataille, Region I TPO

QUANTALEX
INCORPORATED

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TEL 303 237·7879
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April 18, 1991

Ms. Joanna Hall
Alliance Technologies Corp.
Boott Mills South, Foot of John Street
Lowell, MA 01852

RE: Case 15474, SDG AY742
Gulf South Environmental Laboratory
Volatiles: 4/Soil, 4/Water; AY741-AY748
Semivolatiles: 4/Soil, 4/Water; AY741-AY748
Pesticide/PCBs: 4/Soil, 4/Water; AY741-AY748

Dear Ms. Hall:

Validation was performed on the analytical data from Case 15474 low and medium level soil and water samples which were collected by Alliance Technologies Corp. and submitted to Gulf South Environmental Laboratory for volatile, semivolatile, and pesticide analyses. The data were evaluated based on the following parameters:

- Data completeness
- Holding times
- * GC/MS tuning
- Calibration
- Blanks
- Surrogate recoveries
- Matrix spike/matrix spike duplicate
- Field duplicates
- * Internal standard performance
- Compound identification
- Compound quantitation

* All criteria were met for this parameter

Table 1 summarizes the validation recommendations which were based on the following information:

Data Completeness

The sample collection dates and sample numbers on the organic traffic report were illegible because of poor copy quality. Most of the sample collection dates were acquired from the inorganic traffic report. There was some confusion as to the sample collection date of sample AY741. The sample collection date could barely be discerned as 12/06/90. But the shipping date appeared to be 12/05/90. Therefore it was decided that the sample collection date must also be 12/05/90. A resubmitted traffic report was also illegible.

Semivolatiles:

A reference standard mass spectrum was not provided for Benzo(a)pyrene in sample AY744. The positive result was confirmed by a NBS standard spectrum.

Pesticides:

The Evaluation Standard Mix concentrations were missing and pesticide pages 45-57 were illegible. All information was resubmitted upon request.

Holding Times

Volatiles:

All results in sample AY741 are estimated (J or UJ) because the holding time exceeded fourteen days.

Calibrations

Volatiles:

The following calibrations had compounds whose percent relative standard deviations (%RSD) or percent differences (%D) exceeded 50% or whose response factors (RF) were less than 0.05. The non-detected results for 4-Methyl-2-pentanone, 2-Hexanone, Vinyl Acetate, and Methylene Chloride are estimated (UJ) and the non-detected results for 2-Butanone and 2-Hexanone are rejected (R) in the associated samples.

Compound	CC 12/15/90 Inst. A	IC 12/15/90 Inst. D	CC 12/12/90 Inst. D	IC 12/11/90 Inst. E	IC 12/17/90 Inst. E	CC 12/17/90 Inst. E
4-Methyl-2-pentanone	XX		XX			
2-Hexanone	XX		+			
Vinyl Acetate			XX			
Methylene Chloride				X		
2-Butanone		+	+		+	+
Associated samples:	AY748	AY743 AY744	AY743 AY744	AY742 AY745	AY746 AY747	AY746 AY747

X = %RSD > 50%
XX = %D > 50%
\+ = RF < 0.05

Semivolatiles:

The percent difference (%D) for Benzoic Acid exceeded 50% in the 12/19/90 continuing calibration. Therefore, the non-detected results for Benzoic Acid are estimated (UJ) in the associated samples.

Compound	CC 12/19/90 Inst. C
Benzoic Acid	X
Associated sample:	AY742, AY743, AY745

X = %D > 50%

Pesticides:

Numerous compounds' %Ds exceeded the 15% or 20% criteria in all analytical sequences. Therefore, the positive results for Heptachlor in sample AY746 and for beta-BHC, Heptachlor Epoxide, and Endrin Ketone in samples AY746 and AY747 are estimated (J).

Endrin Aldehyde and 4,4'-DDD do not coelute on any of the associated columns, therefore combined percent breakdowns were not necessary. Separate percent breakdowns were calculated for columns with combined percent breakdowns and no action is necessary.

Blanks

Volatiles:

The method blanks were contaminated with Methylene Chloride, Acetone and Ethylbenzene. The positive results for Methylene Chloride and Acetone in samples AY742, AY743, AY744, AY745, AY746, and AY747; the positive results for Ethylbenzene in samples AY746, AY747, and AY748; and the positive result for Methylene Chloride in sample AY748 are adjusted according to the following:

Compound	Maximum Concentration	Action Level
Low Level		
Methylene Chloride	23 ug/Kg	230 ug/Kg
Acetone	17 ug/L	170 ug/L
Ethylbenzene	3 ug/L	15 ug/L
Medium Level		
Methylene Chloride	1400 ug/Kg	14000 ug/Kg
Acetone	2900 ug/Kg	29000 ug/Kg

Action:
Value <CRQL: report CRQL followed by a U
Value >CRQL but <action level: report value followed by a U
Value >CRQL and >action level: report value unqualified

Semivolatiles:

A semivolatile blank was contaminated with bis(2-Ethylhexyl)phthalate. The positive results for this compound in samples AY744, AY746, and AY747 are adjusted according to the following:

Compound	Maximum Concentration	Action Level
bis(2-Ethylhexyl)phthalate	3 ug/L	30 ug/L or 2100 ug/Kg

Action:

Value <CRQL: report CRQL followed by a U
Value >CRQL but <action level: report value followed by a U
Value >CRQL and >action level: report value unqualified

Surrogates

	VOA			Acid			Pesticide
Sample	TOL	BFB	DCE	PHL	2FP	TBP	DBC
AY743						130%	
AY743DL	0%	0%	0%				
AY743DL1	0%	0%	0%				
AY744	0%	0%	0%				
AY744DL	0%	0%	0%				
AY745							204%
AY748				5%	0%	1%	

Volatiles:

Samples AY743 and AY744 were analyzed at medium levels due to high concentrations. The surrogates in sample AY744 and in all dilutions of both samples AY743 and AY744 were diluted out. The original analysis of sample AY744 was analyzed at a 100X dilution (no undiluted analysis provided). Non-detected results may be rejected due to 0% surrogate recovery. However considering the dilution level and elevated CRQLs, the non-detected results in sample AY744 are estimated (UJ). The positive results in samples AY743 and AY744 taken from the diluted analyses are estimated (J).

Semivolatiles:

The surrogate recovery for 2,4,6-Tribromophenol exceeded recovery limits in the acid fraction of sample AY743. Since only one surrogate recovery was outside QC limits in the fraction, no action is taken.

The surrogate recoveries for Phenol-d5, 2-Fluorophenol, and 2,4,6-Tribromophenol in the acid fraction of sample AY748 were less than 10%. This sample was also the matrix spike and matrix spike duplicate. Similar percent recoveries were obtained (less than 10%). The non-detected results in the acid fraction for sample AY748 are rejected (R).

Pesticides:

It was not possible to reproduce the surrogate recoveries reported for samples AY745, AY745MS, and AY745MSD. The surrogate recovery reported on Form 2F for sample AY745 (and the MS and MSD of this sample) was one-half what it should have been. Surrogate recoveries in all other samples indicated the concentration of the surrogate

spiking solution 111-48DBC-40 to be 40 ug/ml. 50 ul of this solution was spiked into 30g of sample AY745 yielding a spike concentration of 66.7 ug/Kg. The resultant percent recovery is 204%, not 102%. Therefore, the positive result for Aroclor-1254 in sample AY745 is estimated (J).

Matrix Spike/Matrix Spike Duplicate

Volatiles:

The percent recoveries for Toluene and Chlorobenzene and the relative percent differences (RPD) for Toluene exceeded criteria in the matrix spike/matrix spike duplicate (MS/MSD) analyses of sample AY743. No action is taken because there was no positive Chlorobenzene result in the unspiked sample, AY743. No action is taken on the positive Toluene result because the extremely high Toluene concentration in this sample caused the MS/MSD criteria to be exceeded.

The percent recoveries of 1,1-Dichloroethene in the MS analysis, and 1,1-Dichloroethene and Benzene in the MSD analysis of sample AY748 exceeded criteria. The RPD for Toluene exceeded criteria as well. No action is taken because there were no positive results for these compounds in the unspiked sample.

Semivolatiles:

The percent recovery for Phenol in the MS analysis and 2,4-Dinitrotoluene in the MS/MSD analyses exceeded criteria for low level soils. These compounds were undetected in the unspiked sample AY742, thus no action is required.

The percent recoveries for Phenol, 2-Chlorophenol, and Pentachlorophenol in the MS/MSD analyses were less than 10%. Therefore, the non-detected results for Phenol, 2-Chlorophenol, and Pentachlorophenol in the associated unspiked sample AY748 are rejected (R). (All acid fraction results are rejected because of surrogate recoveries.)

Pesticides:

The percent recoveries for Aldrin, Dieldrin, and 4,4'-DDT exceeded the criteria for the MS/MSD analyses of sample AY745. The percent recoveries for 4,4'-DDT in the MS analysis and for all compounds in the MSD analysis of sample AY748 exceeded criteria. The RPD for all compounds exceeded criteria. No action is necessary because there were no positive results for the spiking compounds in the unspiked samples, AY745 and AY748.

Field Duplicates

Volatiles:

The RPDs for 1,1,1-Trichloroethane, Trichloroethene, Benzene, Tetrachloroethene, and Toluene exceeded 50% for the field duplicate samples AY743 and AY744. The positive results for 1,1,1-Trichloroethane, Benzene, Tetrachloroethene, and Toluene in sample AY743 are estimated (J). The positive result for Toluene is estimated (J) and the non-detected results for 1,1,1-Trichloroethane, Benzene, and Tetrachloroethene are estimated (UJ) in sample AY744. (No action is taken on Trichloroethene because the positive result for this compound in sample AY743 was below the Contract Required Quantitation Limits (CRQL).)

The RPD for Total Xylenes exceeded 30% in the field duplicate samples AY746 and AY747. No action is taken because the positive result for this compound in sample AY747 was below the Contract Required Quantitation Limit (CRQL).

Semivolatiles:

The RPDs for 2-Nitroaniline, Phenol, Phenanthrene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Bis(2-Ethylhexyl)phthalate, Benzo(b)fluoranthene, Benzo(k)fluoranthene, and Benzo(a)pyrene exceeded 50% for the field duplicate samples AY743 and AY744. No action is taken against all of these compounds because the positive result for these compounds in sample AY744 were below the Contract Required Quantitation Limits (CRQLs).

The RPDs for Phenol and 2-Chlorophenol exceeded 30% for the field duplicate samples AY746 and AY747. Therefore, the positive results for these compounds in samples AY746 and AY747 are estimated (J).

Pesticides:

Aroclor-1254 exceeded the 50% RPD limit for soils in samples AY743 and AY744. Therefore, the positive result in sample AY744 is estimated. The non-detected result for sample AY743 is not estimated because the compound was found below the CRQL (but was not reported).

Heptachlor exceeded the 30% RPD limit for water in samples AY746 and AY747. Therefore the positive result is estimated (J) in sample AY746 and the non-detected result is estimated (UJ) in sample AY747 for Heptachlor.

Other QC

Semivolatiles:

There appears to have been an error in the printing of Form 1 for Tentatively Identified Compounds for sample AY744. Three of the TICs that were on the quantitation report were not reported on Form I. The TICs and their concentrations are as follows:

RT	Compound	Concentration	Scan #
7.24	Unknown alcohol	947 ug/L	444
7.36	Ketone	1448 ug/L	456
8.05	Chloro-methyl Benzene	94541 ug/L	485

Pesticides:

The relative standard deviation exceeded 10% for 4,4'-DDT on the DB-1701 column analyzed 12/13/90 to 12/15/90. The low water MS/MSD percent recoveries for 4,4'-DDT were not calculated using linear regression. No action is necessary because the correct percent recoveries were determined and still exceeded criteria.

Compound Identification

Pesticides:

It appears that a false negative was reported for Aroclor-1254 in sample AY744. Eight peaks were used to recalculate the positive result yielding a concentration of 3700 ug/Kg

Aroclor-1254 in sample AY744. (This compound was found in the duplicate sample as well, but below the CRQL.)

Heptachlor was reported as a false negative in sample AY746. Peaks were evident in Heptachlor's retention time windows on both columns. Both were greater than the CRQL. The Heptachlor result for sample AY746 is reported as 0.058 ug/L on the data summary tables.

		R.T.	Window
Heptaclor	Column 1 (DB1701)	12.14	12.11-12.29
	Column 2 (DB608)	9.55	9.45-9.59

Compound Quantitation

Pesticides:

The positive results for Endrin Ketone in samples AY746 and AY747 are estimated (J) due to a lack of quantitative agreement between the primary and confirmation columns. (The two values differed by greater than twofold.)

General Comments

Positive results reported below the Contract Required Quantitation Limits (CRQLs) are qualified as estimated (J).

Tentatively Identified Compounds (TICs) which were common laboratory artifacts/ contaminants (aldol products, solvent preservatives, reagent contaminants, etc.) or which were also found in any associated blank were not listed on Table II - Tentatively Identified Compound Summary.

Semivolatiles:

The volatile target compounds Ethylbenzene and Xylene were reported as TICs in samples AY743, AY744, AY746, and AY747. These compounds are not reported on Table II.

Sincerely,
QuantaLex, Inc.

Jill Gaschler
Associate Consultant

Anthony Toth
Staff Consultant

Enclosure

CIBA-GEIGY
CASE 15474
TABLE I - RECOMMENDATIONS SUMMARY

TR #	VOA	BASE/NEUTRAL	ACIDS	PEST./PCB
AY741	J[2]	A	A	A
AY742	A[1],A[8]	A	A[9]	A
AY743	A[1],A[5],A[7],A[10],A[12]	A	A[9]	A
AY744	J[1]	A[4]	A	A[16]
AY745	A[1],A[8]	A	A[9]	A[14]
AY746	A[1],A[3],A[5]	A[4]	A[11]	A[13],A[15],A[17]
AY747	A[1],A[3],A[5]	A[4]	A[11]	A[13],A[17]
AY748	A[2],A[3],A[6]	A	R[1]	A

A - Accept all data.

A[1] - Accept data but change positive values for Acetone and Methylene Chloride to revised detection limit due to blank contamination.

A[2] - Accept data but change positive value for Methylene Chloride to revised detection limit due to blank contamination.

A[3] - Accept data but change positive values for Ethylbenzene to revised detection limit due to blank contamination.

A[4] - Accept data but change positive values for bis(2-Ethylhexyl)phthalate to revised detection limit due to blank contamination.

A[5] - Accept data but estimate (J) positive values or reject (R) the detection limits for 2-Butanone due to the RF being less than 0.05.

A[6] - Accept data but estimate (UJ) detection limits for 4-Methyl-2-pentanone and 2-Hexanone due to calibrations being out of range.

A[7] - Accept data but estimate (UJ) detection limits for Vinyl Acetate and 4-Methyl-2-pentanone due to calibrations being out of range. Reject (R) detection limit for 2-Hexanone due to the RF being less than 0.05.

A[8] - Accept data but estimate (UJ) detection limits for Methylene Chloride due to calibrations being out of range.

A^9 - Accept data but estimate (UJ) detection limits for Benzoic Acid due to calibrations being out of range.

A^{10} - Accept data but estimate (J) positive values for 1,1,1-Trichloroethane, Benzene, Tetrachloroethene and Toluene due to lack of field duplicate precision.

A^{11} - Accept data but estimate (J) positive values for Phenol and 2-Chlorophenol due to lack of field duplicate precision.

A^{12} - Accept data but estimate (J) positive values for Toluene, Ethylbenzene, and Xylene (taken from diluted analyses) due to surrogates being diluted out.

A^{13} - Accept data but estimate (J) positive results due to calibrations being out of range. (Positive Endrin Ketone results also estimated due to lack of quantitative agreement between columns.)

A^{14} - Accept data but estimate (J) positive result for Aroclor-1254 due to high surrogate recovery.

A^{15} - Accept data but change non-detected result for Heptachlor to positive value due to false negative.

A^{16} - Accept data but change non-detected result for Aroclor-1254 to positive value due to false negative. Estimate (J) Aroclor-1254 result due to lack of field duplicate precision.

A^{17} - Accept data but estimate (J or UJ) results for Heptachlor due to lack of field duplicate precision.

J^1 - Estimate (J or UJ) all results due to surrogates being diluted out. Reject (R) detection limits for 2-Butanone and 2-Hexanone due to RF being less than 0.05. (See memo for further explanation of surrogate qualification and for additional qualification of individual compounds.)

J^2 - Estimate (J or UJ) all results due to holding time violations.

R^1 Reject (R) detection limits due to 0% surrogate recoveries.

CIBA-GEIGY
CASE 15474
TABLE II - TENTATIVELY IDENTIFIED COMPOUND SUMMARY

Semivolatile Compound	Volatile Compound
AY742 (1 TIC)	AY742 (1 TIC)
Unknown	Unknown hydrocarbon
AY743 (15 TICs)	AY743 (7 TICs)
Ethyl-methyl-cyclohexane (2)	Unknown hydrocarbon (5)
Unknown hydrocarbon (2)	Unknown cyclic hydrocarbon (2)
Chloro-methyl-benzene	
2,3-Dihydro-1,1,3-Trimethyl-3-phenyl-1H-Indene	
Unknown chlorinated organic (5)	AY744 (1 TIC)
Unknown (4)	Chloro-methyl Benzene
AY744 (18 TICs)	AY745 (5 TICs)
Ethyl-methyl-cyclohexane (2)	Unknown hydrocarbon (2)
Unknown hydrocarbon	1-Chloro-4-(Trifluoromethyl)Benzene
Ketone	Chloro-methyl Benzene (2)
Unknown alcohol	
2,3-Dihydro-1,1,3-Trimethyl-3-phenyl-1H-Indene	
Fatty Acid	
Unknown chlorinated aromatic (5)	
Chloro-methyl benzene	
Unknown (5)	
AY745 (4 TICs)	
2-(2H-Benzotriazol-2-YL)-4-methyl-phenol	
Unknown	
AY746 (18 TICs)	
Trifluoromethyl-benzenamine	
Tetramethyl-4-Piperidinone	
Tetramethyl-4-Piperidinol	
Chloro(trifluoromethyl)benzenamine	
Unknown ketone	
1-H-benzotriazole (2)	
Fatty ester	
2,2-Dimethoxy-1,2-Diphenyl-Ethanone	
3,5-bis(1,1-Dimethylethyl)-4-hydroxy-benzoic acid	
Unknown	

CIBA-GEIGY
CASE 15474
TABLE II - TENTATIVELY IDENTIFIED COMPOUND SUMMARY
(continued)

Semivolatile Compound
AY747 (19 TICs)
Tetramethyl-4-piperidinone
Tetramethyl-4-Piperidinol
Benzeneacetic Acid
Chloro-(Trifluoromethyl)benzenamine
Bis(1,1-Dimethylethyl)phenol
Unknown ketone
1-H-Benzotriazole
Phenoxy-phenol
2,2-Dimethoxy-1,2-Diphenyl-Ethanone
3,5-Bis(1,1-Dimethylethyl)-4-hydroxy-benzoic acid
Unknown (9)
AY748 (2 TICs)
2-Proponol-ether
Unknown

Region I

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 15474
LABORATORY Gulf South Environmental Laboratory

SDG # AY742
SOW # 2/88
DPO: ACTION _____ FYI _____

SITE Ciba-Geigy
NO. OF SAMPLES/
MATRIX 4/Water, 4/Soil
REVIEWER (IF NOT ESD) QuantaLex, Inc.
REVIEWER'S NAME Anthony Toth
COMPLETION DATE April 18, 1991

Data Assessment Summary

		VOA	BNA	Pest.	Other
1.	Holding Times	O	O	O	
2.	GC/MS Tune/Instr.Perf.	O	O	N/A	
3.	Calibrations	M	O	O	
4.	Blanks	X	X	O	
5.	Surrogates	M	M	X	
6.	Matrix Spike/Dup.	X	M	O	
7.	Other QC	O	X	X	
8.	Internal Standards	O	O	N/A	
9.	Compound Identification	O	O	X	
10.	System Performance	O	O	O	
11.	Overall Assessment	O	O	O	

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.

ACTION ITEMS: Please refer to the memo and discussions pertaining to each data assessment category.

AREAS OF CONCERN: 1) Zero percent surrogate and matrix spike recoveries for the acid fractions of sample AY748 and the associated MS/MSD.
2) Surrogates diluted out of sample AY744 and dilutions of samples AY743 and AY744 (volatiles).
3) False negatives in pesticide samples.
4) High level results in volatile samples.

NOTABLE PERFORMANCE:

This work was conducted on behalf of Alliance Technologies Corp. under subcontract #1-635-058 (R01005).

REGION I
Data Review Worksheets

Site Name Ciba-Geigy
Reference Number

REGION I REVIEW OF ORGANIC CONTRACT LABORATORY DATA PACKAGE

The hardcopied Gulf South Environmental Laboratory data package received at Region I has been reviewed and the quality assurance and performance data summarized. The data reviewed included:

Case No.	15474	SAS No.		Sampling Date(s):	12/06/90
SDG No.	AY742	Matrix	Soil/Water	Shipping Date(s):	12/05,06/90
No. of Samples	8			Date Rec'd by Lab:	12/07,08/90

Traffic Report Nos.: AY741, AY742, AY743, AY744, AY745, AY746, AY747, AY748

Trip Blank No.:
Equipment Blank No.: AY741 (Rinsate)
Field Dup. Nos.: AY743/AY744; AY746/AY747

SOW No. 2/88 requires that specific analytical work be done and that associated reports be provided by the laboratory to the Regions, EMSL-LV, and SMO. The general criteria used to determine the performance were based on an examination of:

- Data Completeness
- Holding Times
- GC/MS Tuning
- Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Dup
- Field Duplicates
- Internal Standard Performance
- Pesticide Inst. Performance
- Compound Identification
- Compound Quantitation

Overall comments:

Definitions of Qualifiers:

A - Acceptable data.
J - Approximate data due to quality control criteria.
R - Reject data due to quality control criteria.
U - Compound not detected.

Reviewer: Anthony Roth Date: 4-18-91

I. DATA COMPLETENESS

MISSING INFORMATION	DATE LAB CONTACTED	DATE RECEIVED
The organic traffic reports were illegible.	Unknown	03/26/91
Semivolatiles:		
Reference mass spectrum for Benzo(a)pyrene in sample AY744.	Not requested. (See memo.)	
Pesticides:		
Evaluation mix standard concentrations.	Unknown	03/26/91
Quantitation report is illegible (pages 45-57).	Unknown	03/26/91

II. HOLDING TIMES

Complete table for all samples and circle the fractions which are not within criteria.

SAMPLE ID	DATE SAMPLED	VOA DATE ANAL	BNA DATE EXTR	BNA DATE ANAL	PEST DATE EXTR	PEST DATE ANAL
AY741	12/05/90	12/20/90	12/11/90	12/13/90	12/11/90	12/15/90
AY742	12/06/90	12/11/90	12/11/90	12/19/90	12/13/90	12/19/90
AY743	12/06/90	12/12/90	12/11/90	12/19/90	12/13/90	12/20/90
AY743DL	12/06/90	12/12/90	--	--	12/13/90	12/20/90
AY743DL1	12/06/90	12/13/90	--	--		
AY744	12/06/90	12/12/90	12/11/90	12/27/90	12/13/90	12/20/90
AY744DL	12/06/90	12/13/90	--	--	12/13/90	12/20/90
AY745	12/06/90	12/11/90	12/11/90	12/19/90	12/11/90	12/28/90
AY746	12/06/90	12/17/90	12/11/90	12/13/90	12/11/90	12/14/90
AY747	12/06/90	12/17/90	12/11/90	12/13/90	12/11/90	12/15/90
AY748	12/06/90	12/15/90	12/11/90	12/13/90	12/11/90	12/15/90

VOA - Unpreserved: Aromatic within 7 days, non-aromatic within 14 days of sample collection.
Preserved: Both within 14 days of sample collection.
Soils: Both within 14 days of sample collection.

BNA & PEST - Extracted within 7 days, analyzed within 40 days, soils and water.

ACTION:

1. If holding times are exceeded all positive results are estimated (J) and non-detects are estimated (UJ).
2. If holding times are grossly exceeded, the reviewer may determine that non-detects are unusable (R).

III. GC/MS TUNING

__X__ The DFTPP performance results were reviewed and found to be within the specified criteria.

If no,
Samples affected:_____

__X__ The BFB performance results were reviewed and found to be within the specified criteria.

If no,
Samples affected:_____

If mass calibration is in error, refer to the Region guidelines for expanded criteria. If necessary, all associated data as unusable (R).

IV A. VOLATILE CALIBRATION VERIFICATION

Date of Initial Calibration : 12/12/90
Dates of Continuing Calibrations : 12/15/90
Instrument ID : A
Matrix/Level : Low/Water

DATE	CRITERIA OUT RF, %RSD, RF, %D	COMPOUND (VALUE)
12/12/90	%RSD	Acetone (46.2)
	Samples Affected:	None
12/15/90	%D	Acetone (-34.4)
	Samples Affected:	None
12/15/90	%D	2-Butanone (-40.3)
	Samples Affected:	None
12/15/90	%D	Vinyl Acetate (-45.8)
	Samples Affected:	None
12/15/90	%D	4-Methyl-2-pentanone (-82.4)
	Samples Affected:	AY748
12/15/90	%D	2-Hexanone (-88.5)
	Samples Affected:	AY748
12/15/90	%D	1,1,2,2-Tetrachloroethane (-26.8)
	Samples Affected:	None
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	

1. All RF's, and RF's must be >0.05.
2. All %RSD's must be <30%.
3. All %D's must be <25%.

ACTION:

1. If any compound has an initial RF or a continuing RF of <0.05:
   a. Flag positive results for that compound as estimated (J).
   b. Flag non-detects for that compound as unusable (R).

2. If any compound has a %RSD >30% or a %D >25%:
   a. Flag positive results for that compound as estimated (J).
   b. Flag non-detects for that compound as estimated (UJ) if the %RSD or %D is >50%.

A separate worksheet should be filled out for each initial curve.

IV A. VOLATILE CALIBRATION VERIFICATION

Date of Initial Calibration : 12/19/90
Dates of Continuing Calibrations : 12/20/90
Instrument ID : A
Matrix/Level : Water/Low

DATE	CRITERIA OUT RF, %RSD, RF, %D	COMPOUND (VALUE)
12/19/90	%RSD	Bromomethane (31.5)
	Samples Affected:	None
12/19/90	%RSD	Acetone (46.2)
	Samples Affected:	None
12/19/90	%RSD	4-Methyl-2-pentanone (31.0)
	Samples Affected:	None
12/20/90	%D	Bromomethane (-32.6)
	Samples Affected:	None
12/20/90	%D	Acetone (31.8)
	Samples Affected:	None
12/20/90	%D	2-Butanone (31.9)
	Samples Affected:	None
12/20/90	%D	1,1,2,2-Tetrachloroethane (27.8)
	Samples Affected:	None
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	

1. All RF's, and RF's must be >0.05.
2. All %RSD's must be <30%.
3. All %D's must be <25%.

ACTION:

1. If any compound has an initial RF or a continuing RF of <0.05:
   a. Flag positive results for that compound as estimated (J).
   b. Flag non-detects for that compound as unusable (R).

2. If any compound has a %RSD >30% or a %D >25%:
   a. Flag positive results for that compound as estimated (J).
   b. Flag non-detects for that compound as estimated (UJ) if the %RSD or %D is >50%.

A separate worksheet should be filled out for each initial curve.

IV A. VOLATILE CALIBRATION VERIFICATION

Date of Initial Calibration : 12/05/90
Dates of Continuing Calibrations : 12/12,13/90
Instrument ID : D
Matrix/Level : Soil/Medium

DATE	CRITERIA OUT RF, %RSD, RF, %D	COMPOUND (VALUE)
12/05/90	RF	2-Butanone (0.025)
	Samples Affected:	AY743, AY744
12/05/90	%RSD	Methylene Chloride (34.8)
	Samples Affected:	None
12/05/90	%RSD	Acetone (46.9)
	Samples Affected:	None
12/05/90	%RSD	2-Butanone (60.0)
	Samples Affected:	None
12/05/90	%RSD	2-Hexanone (36.7)
	Samples Affected:	None
12/05/90	%RSD	1,1,2,2-Tetrachloroethane (32.8)
	Samples Affected:	None
12/12/90	RF	2-Butanone (0.008)
	Samples Affected:	AY743, AY744
12/12/90	RF	2-Hexanone (0.048)
	Samples Affected:	AY743, AY744
12/12/90	%D	Acetone (26.7)
	Samples Affected:	None
12/12/90	%D	2-Butanone (68.0)
	Samples Affected:	None

1. All RF's, and RF's must be >0.05.
2. All %RSD's must be <30%.
3. All %D's must be <25%.

ACTION:

1. If any compound has an initial RF or a continuing RF of <0.05:
   a. Flag positive results for that compound as estimated (J).
   b. Flag non-detects for that compound as unusable (R).

2. If any compound has a %RSD >30% or a %D >25%:
   a. Flag positive results for that compound as estimated (J).
   b. Flag non-detects for that compound as estimated (UJ) if the %RSD or %D is >50%.

A separate worksheet should be filled out for each initial curve.

IV A. VOLATILE CALIBRATION VERIFICATION

Date of Initial Calibration : 12/05/90
Dates of Continuing Calibrations : 12/12,13/90
Instrument ID : D
Matrix/Level : Soil/Medium

DATE	CRITERIA OUT RF, %RSD, RF, %D	COMPOUND (VALUE)
12/12/90	%D	Vinyl Acetate (52.5)
	Samples Affected:	AY743, AY744
12/12/90	%D	Dibromochloromethane (32.2)
	Samples Affected:	None
12/12/90	%D	1,1,2-Trichloroethane (30.3)
	Samples Affected:	None
12/12/90	%D	Bromoform (42.2)
	Samples Affected:	None
12/12/90	%D	4-Methyl-2-pentanone (51.7)
	Samples Affected:	AY743, AY744
12/12/90	%D	2-Hexanone (59.3)
	Samples Affected:	None
12/12/90	%D	Styrene (27.4)
	Samples Affected:	None
12/13/90	RF	2-Butanone (0.008)
	Samples Affected:	None
12/13/90	RF	Trans-1,3-Dichloropropene (0.049)
	Samples Affected:	None
12/13/90	RF	2-Hexanone (0.048)
	Samples Affected:	None

1. All RF's, and RF's must be >0.05.
2. All %RSD's must be <30%.
3. All %D's must be <25%.

ACTION:

1. If any compound has an initial RF or a continuing RF of <0.05:
   a. Flag positive results for that compound as estimated (J).
   b. Flag non-detects for that compound as unusable (R).

2. If any compound has a %RSD >30% or a %D >25%:
   a. Flag positive results for that compound as estimated (J).
   b. Flag non-detects for that compound as estimated (UJ) if the %RSD or %D is >50%.

A separate worksheet should be filled out for each initial curve.

IV A. VOLATILE CALIBRATION VERIFICATION

Date of Initial Calibration : 12/05/90
Dates of Continuing Calibrations : 12/12,13/90
Instrument ID : D
Matrix/Level : Soil/Medium

DATE	CRITERIA OUT RF, %RSD, RF, %D	COMPOUND (VALUE)
12/13/90	%D	Acetone (37.7)
	Samples Affected:	None
12/13/90	%D	2-Butanone (68.0)
	Samples Affected:	None
12/13/90	%D	Vinyl Acetate (49.4)
	Samples Affected:	None
12/13/90	%D	Trans-1,3-Dichloropropene (25.8)
	Samples Affected:	None
12/13/90	%D	4-Methyl-2-pentanone (51.2)
	Samples Affected:	None
12/13/90	%D	2-Hexanone (59.3)
	Samples Affected:	None
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	

1. All RF's, and RF's must be >0.05.
2. All %RSD's must be <30%.
3. All %D's must be <25%.

ACTION:

1. If any compound has an initial RF or a continuing RF of <0.05:
   a. Flag positive results for that compound as estimated (J).
   b. Flag non-detects for that compound as unusable (R).

2. If any compound has a %RSD >30% or a %D >25%:
   a. Flag positive results for that compound as estimated (J).
   b. Flag non-detects for that compound as estimated (UJ) if the %RSD or %D is >50%.

A separate worksheet should be filled out for each initial curve.

IV A. VOLATILE CALIBRATION VERIFICATION

Date of Initial Calibration : 12/11/90
Dates of Continuing Calibrations : ---
Instrument ID : E
Matrix/Level : Soil/Low

DATE	CRITERIA OUT RF, %RSD, RF, %D	COMPOUND (VALUE)
12/11/90	%RSD	Methylene Chloride (79.5)
	Samples Affected:	AY742, AY745
12/11/90	%RSD	Acetone (46.6)
	Samples Affected:	None
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	

1. All RF's, and RF's must be >0.05.
2. All %RSD's must be <30%.
3. All %D's must be <25%.

ACTION:

1. If any compound has an initial RF or a continuing RF of <0.05:
   a. Flag positive results for that compound as estimated (J).
   b. Flag non-detects for that compound as unusable (R).

2. If any compound has a %RSD >30% or a %D >25%:
   a. Flag positive results for that compound as estimated (J).
   b. Flag non-detects for that compound as estimated (UJ) if the %RSD or %D is >50%.

A separate worksheet should be filled out for each initial curve.

IV A. VOLATILE CALIBRATION VERIFICATION

Date of Initial Calibration : 12/17/90
Dates of Continuing Calibrations : 12/17/90
Instrument ID : E
Matrix/Level : Low/Water

DATE	CRITERIA OUT RF, %RSD, RF, %D	COMPOUND (VALUE)
12/17/90	RF	2-Butanone (0.009)
	Samples Affected:	AY746, AY747
12/17/90	RF	2-Butanone (0.010)
	Samples Affected:	AY746, AY747
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	

1. All RF's, and RF's must be >0.05.
2. All %RSD's must be <30%.
3. All %D's must be <25%.

ACTION:

1. If any compound has an initial RF or a continuing RF of <0.05:
   a. Flag positive results for that compound as estimated (J).
   b. Flag non-detects for that compound as unusable (R).

2. If any compound has a %RSD >30% or a %D >25%:
   a. Flag positive results for that compound as estimated (J).
   b. Flag non-detects for that compound as estimated (UJ) if the %RSD or %D is >50%.

A separate worksheet should be filled out for each initial curve.

IV B. SEMIVOLATILE CALIBRATION VERIFICATION

Date of Initial Calibration : 12/15/90
Dates of Continuing Calibrations : 12/27/90
Instrument ID : B

DATE	CRITERIA OUT RF, %RSD, RF, %D	COMPOUND
12/27/90	%D	4-Chloroaniline (-47.6)
	Samples Affected:	None
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	

See worksheet IV-A for criteria and actions.

A new worksheet should be filled out for each initial curve.

IV B. SEMIVOLATILE CALIBRATION VERIFICATION

Date of Initial Calibration : 12/06/90
Dates of Continuing Calibrations : 12/19/90
Instrument ID : C

DATE	CRITERIA OUT RF, %RSD, RF, %D	COMPOUND
12/19/90	%D	Benzoic Acid (64.3)
	Samples Affected:	AY742, AY743, AY745
12/19/90	%D	2,4-Dinitrophenol (49.7)
	Samples Affected:	None
12/19/90	%D	4,6-Dinitro-2-methylphenol (26.4)
	Samples Affected:	None
12/19/90	%D	2-Fluorophenol (29.9)
	Samples Affected:	None
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	

See worksheet IV-A for criteria and actions.

A new worksheet should be filled out for each initial curve.

IV B. SEMIVOLATILE CALIBRATION VERIFICATION

Date of Initial Calibration : 12/11/90
Dates of Continuing Calibrations : 12/13/90
Instrument ID : F

DATE	CRITERIA OUT RF, %RSD, RF, %D	COMPOUND
12/11/90	%RSD	2,4-Dinitrophenol (34.2)
	Samples Affected:	None
12/13/90	%D	2,4-Dinitrophenol (29.8)
	Samples Affected:	None
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	

See worksheet IV-A for criteria and actions.

A new worksheet should be filled out for each initial curve.

V A. BLANK ANALYSIS RESULTS (Sections 1 & 2)

List the contamination in the blanks below.

1. Laboratory Blanks

Level: Low

DATE	LAB ID	FRACTION/ MATRIX	COMPOUND	CONCENTRATION/ UNITS
12/11/90	VBLKL1	VOA/Soil	Methylene Chloride	23 ug/Kg
12/11/90	VBLKL1	VOA/Soil	Acetone	16 ug/Kg
12/17/90	VBLKW1	VOA/Water	Methylene Chloride	5 ug/L
12/17/90	VBLKW1	VOA/Water	Acetone	10 ug/L
12/15/90	VBLKW2	VOA/Water	Methylene Chloride	9 ug/L
12/15/90	VBLKW2	VOA/Water	Acetone	11 ug/L
12/15/90	VBLKW2	VOA/Water	Ethylbenzene	3 ug/L
12/19/90	VBLKW3	VOA/Water	Methylene Chloride	5 ug/L
12/19/90	VBLKW3	VOA/Water	Actone	4 ug/L
12/20/90	VBLKW4	VOA/Water	Methylene Chloride	5 ug/L
12/20/90	VBLKW4	VOA/Water	Acetone	16 ug/L

2. Equipment and Trip Blanks

DATE	TR #	FRACTION/ MATRIX	COMPOUND	CONCENTRATION/ UNITS
12/20/90	AY741	VOA/Water	Methylene Chloride	3 ug/L
12/20/90	AY741	VOA/Water	Acetone	17 ug/L
12/13/90	AY741	BNA/Water	bis(2-Ethylhexyl)phthalate	3 ug/L

A separate worksheet should be used for low and medium level blanks.

V A. BLANK ANALYSIS RESULTS (Sections 1 & 2)

List the contamination in the blanks below.

1. Laboratory Blanks

Level: Medium

DATE	LAB ID	FRACTION/ MATRIX	COMPOUND	CONCENTRATION/ UNITS
12/12/90	VBLKM1	VOA/Soil	Methylene Chloride	580 ug/Kg
12/12/90	VBLKM1	VOA/Soil	Acetone	2900 ug/Kg
12/13/90	VBLKM2	VOA/Soil	Methylene Chloride	1400 ug/Kg
12/13/90	VBLKM2	VOA/Soil	Acetone	1300 ug/Kg

2. Equipment and Trip Blanks

DATE	TR #	FRACTION/ MATRIX	COMPOUND	CONCENTRATION/ UNITS

A separate worksheet should be used for low and medium level blanks.

V B. BLANK ANALYSIS RESULTS (Section 3)

3. Blank Actions

Action levels should be based upon the highest concentration of contaminant determined in any blank. The action level for samples which have been concentrated or diluted should be multiplied by the concentration/dilution factor. No positive sample result should be reported unless the concentration of the compound in the sample exceeds the action level of 10 x's the amount in the blank for the common contaminants, or 5 x's the amount for any other compound. Specific actions are as follows:

1. The concentration is less than the CRQL, report the CRQL.
2. The concentration is greater than the CRQL, but less than the action level, report the concentration found U.
3. The concentration is greater than the action level, report the concentration unqualified.

For examples, refer to the Regional Guidelines.

Common contaminants = methylene chloride, acetone, 2-butanone, toluene, and phthalates.

LEVEL: Low

COMPOUND	MAX. CONC./ UNITS	ACTION LEVEL/ UNITS	CRQL
Methylene Chloride	23 ug/Kg	230 ug/Kg	5 ug/Kg
Acetone	17 ug/L	170 ug/L	10 ug/L
Ethylbenzene	3 ug/L	15 ug/L	5 ug/L
bis(2-Ethylhexyl)phthalate	3 ug/L	30 ug/L or 2100 ug/Kg	10 ug/L or 660 ug/Kg

A separate worksheet should be used for low and medium level blanks.

V B. BLANK ANALYSIS RESULTS (Section 3)

3. Blank Actions

Action levels should be based upon the highest concentration of contaminant determined in any blank. The action level for samples which have been concentrated or diluted should be multiplied by the concentration/dilution factor. No positive sample result should be reported unless the concentration of the compound in the sample exceeds the action level of 10 x's the amount in the blank for the common contaminants, or 5 x's the amount for any other compound. Specific actions are as follows:

1. The concentration is less than the CRQL, report the CRQL.

2. The concentration is greater than the CRQL, but less than the action level, report the concentration found U.

3. The concentration is greater than the action level, report the concentration unqualified.

For examples, refer to the Regional Guidelines.

Common contaminants = methylene chloride, acetone, 2-butanone, toluene, and phthalates.

LEVEL: Medium

COMPOUND	MAX. CONC./ UNITS	ACTION LEVEL/ UNITS	CRQL
Methylene Chloride	1400 ug/Kg	14000 ug/Kg	625 ug/Kg
Acetone	2900 ug/Kg	29000 ug/L	1250 ug/Kg

A separate worksheet should be used for low and medium level blanks.

VI. SURROGATE SPIKE RECOVERIES

List the percent recoveries which do not meet the criteria for surrogate recovery.

Matrix: Water

TR #'s	VOA TOL	VOA BFB	VOA DCE	B/N NBZ	B/N FBP	B/N TPH	A PHL	A 2FP	A TBP	Pest* DBC
AY748							5%	0%	1%	
QC Limits							10%	21%	10%	
	to	to	to	to	to	to	to	to	to	to
							94%	100%	123%	

Surrogate Actions: * Advisory only

	Percent Recovery <10%	10%-CRR	>CRR
Positive sample results	J	J	J
Non-detected results	R	UJ	A

CRR = Contract Required Recovery Range

Surrogate Action should be applied:

1. If at least two surrogates in a B/N or A fraction or one surrogate in the VOA fraction are out of specification, but have recoveries of >10%.
2. If any one surrogate in a fraction shows <10% recovery.

VI. SURROGATE SPIKE RECOVERIES

List the percent recoveries which do not meet the criteria for surrogate recovery.

Matrix: Soil

	VOA			B/N			A		Pest*
TR #'s	TOL	BFB	DCE	NBZ	FBP	TPH	PHL	2FP	TBP	DBC
AY743									130%	
AY743DL	0%	0%	0%							
AY743DL1	0%	0%	0%							
AY744	0%	0%	0%							
AY744DL	0%	0%	0%							
AY745										204%
QC Limits	81%	74%	70%						19%	20%
	to	to	to	to	to	to	to	to	to	to
	117%	121%	121%						122%	150%

Surrogate Actions: * Advisory only

	Percent Recovery		
	≤10%	10%-CRR	≥CRR
Positive sample results	J	J	J
Non-detected results	R	UJ	A

CRR = Contract Required Recovery Range

Surrogate Action should be applied:

1. If at least two surrogates in a B/N or A fraction or one surrogate in the VOA fraction are out of specification, but have recoveries of >10%.
2. If any one surrogate in a fraction shows <10% recovery.

VII A. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

1. Matrix Spike/Matrix Spike Duplicate Recoveries and Precision

TR Nos. AY742MS , AY742MSD Level: Low Matrix: Soil

List the percent recoveries and RPD's of compounds which do not meet the criteria stated on Form 3.

FRACTION/ MS OR MSD	COMPOUND	%REC/ RPD	QC LIMITS
BNA/MS	Phenol	94%	26-90%
BNA/MS	2,4-Dinitrotoluene	98%	28-89%
BNA/MSD	2,4-Dinitrotoluene	101%	28-89%

QUALIFICATION IS LIMITED TO THE UNSPIKED SAMPLE ONLY.

1. If any compound does not meet the Contract Required Recovery range (CRR), follow the actions stated below:

	Percent Recovery		
	<10%	10%-CRR	>CRR
Positive sample results	J	J	J
Non-detected results	R	A	A

2. If any compound does not meet the RPD criteria, flag positive results for that compound as estimated (J).

A separate worksheet should be used for each MS/MSD pair.

VII A. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

1. Matrix Spike/Matrix Spike Duplicate Recoveries and Precision

TR Nos. AY742MS , AY742MSD Level: Medium Matrix: Soil

List the percent recoveries and RPD's of compounds which do not meet the criteria stated on Form 3.

FRACTION/ MS OR MSD	COMPOUND	%REC/ RPD	QC LIMITS
None			

QUALIFICATION IS LIMITED TO THE UNSPIKED SAMPLE ONLY.

1. If any compound does not meet the Contract Required Recovery range (CRR), follow the actions stated below:

	Percent Recovery		
	<10%	10%-CRR	>CRR
Positive sample results	J	J	J
Non-detected results	R	A	A

2. If any compound does not meet the RPD criteria, flag positive results for that compound as estimated (J).

A separate worksheet should be used for each MS/MSD pair.

VII A. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

1. Matrix Spike/Matrix Spike Duplicate Recoveries and Precision

TR Nos. AY743MS , AY743MSD Level: Medium Matrix: Soil

List the percent recoveries and RPD's of compounds which do not meet the criteria stated on Form 3.

FRACTION/ MS OR MSD	COMPOUND	%REC/ RPD	QC LIMITS
VOA/MS	Toluene	154%	59-139%
VOA/MS	Chlorobenzene	167%	60-133%
VOA/MSD	Toluene	307%	59-139%
VOA/MSD	Chlorobenzene	178%	60-133%
VOA/MS/MSD	Toluene	603	21

QUALIFICATION IS LIMITED TO THE UNSPIKED SAMPLE ONLY.

1. If any compound does not meet the Contract Required Recovery range (CRR), follow the actions stated below:

	Percent Recovery		
	<10%	10%-CRR	>CRR
Positive sample results	J	J	J
Non-detected results	R	A	A

2. If any compound does not meet the RPD criteria, flag positive results for that compound as estimated (J).

A separate worksheet should be used for each MS/MSD pair.

VII A. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

1. Matrix Spike/Matrix Spike Duplicate Recoveries and Precision

TR Nos. AY745MS , AY745MSD Level: Low Matrix: Soil

List the percent recoveries and RPD's of compounds which do not meet the criteria stated on Form 3.

FRACTION/ MS OR MSD	COMPOUND	%REC/ RPD	QC LIMITS
PEST/MS	Aldrin	208%	34-132%
PEST/MS	Dieldrin	140%	31-134%
PEST/MS	4,4'-DDT	135%	23-134%
PEST/MSD	Aldrin	209%	34-132%
PEST/MSD	Dieldrin	152%	31-134%
PEST/MSD	4,4'-DDT	140%	34-132%

QUALIFICATION IS LIMITED TO THE UNSPIKED SAMPLE ONLY.

1. If any compound does not meet the Contract Required Recovery range (CRR), follow the actions stated below:

	Percent Recovery		
	<10%	10%-CRR	>CRR
Positive sample results	J	J	J
Non-detected results	R	A	A

2. If any compound does not meet the RPD criteria, flag positive results for that compound as estimated (J).

A separate worksheet should be used for each MS/MSD pair.

VII A. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

1. Matrix Spike/Matrix Spike Duplicate Recoveries and Precision

TR Nos. AY748MS , AY748MSD Level: Low Matrix: Water

List the percent recoveries and RPD's of compounds which do not meet the criteria stated on Form 3.

FRACTION/ MS OR MSD	COMPOUND	%REC/ RPD	QC LIMITS
VOA/MS	1,1-Dichloroethene	56%	61-145%
VOA/MSD	1,1-Dichloroethene	57%	61-145%
VOA/MSD	Benzene	72%	76-127%
VOA/MS/MSD	Toluene	19	13
BNA/MS	Phenol	9%	12-89%
BNA/MSD	Phenol	8%	12-89%
BNA/MS	2-Chlorophenol	4%	27-123%
BNA/MSD	2-Chlorophenol	4%	27-123%
BNA/MS	Pentachlorophenol	0%	9-103%
BNA/MSD	Pentachlorophenol	0%	9-103%
PEST/MS	4,4'-DDT	148%	38-127%
PEST/MSD	gamma-BHC	170%	56-123%
PEST/MSD	Heptachlor	140%	40-131%

QUALIFICATION IS LIMITED TO THE UNSPIKED SAMPLE ONLY.

1. If any compound does not meet the Contract Required Recovery range (CRR), follow the actions stated below:

	Percent Recovery		
	<10%	10%-CRR	>CRR
Positive sample results	J	J	J
Non-detected results	R	A	A

2. If any compound does not meet the RPD criteria, flag positive results for that compound as estimated (J).

A separate worksheet should be used for each MS/MSD pair.

VII A. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

1. Matrix Spike/Matrix Spike Duplicate Recoveries and Precision

TR Nos. AY748MS , AY748MSD Level: Low Matrix: Water

List the percent recoveries and RPD's of compounds which do not meet the criteria stated on Form 3.

FRACTION/ MS OR MSD	COMPOUND	%REC/ RPD	QC LIMITS
PEST/MSD	Aldrin	132%	40-120%
PEST/MSD	Dieldrin	196%	52-126%
PEST/MSD	Endrin	192%	56-121%
PEST/MSD	4,4'-DDT	218%	38-127%
PEST/MS/MSD	gamma-BHC	48	15
PEST/MS/MSD	Heptachlor	52	20
PEST/MS/MSD	Aldrin	46	22
PEST/MS/MSD	Dieldrin	48	18
PEST/MS/MSD	Endrin	47	21
PEST/MS/MSD	4,4'-DDT	38	27

QUALIFICATION IS LIMITED TO THE UNSPIKED SAMPLE ONLY.

1. If any compound does not meet the Contract Required Recovery range (CRR), follow the actions stated below:

	Percent Recovery		
	<10%	10%-CRR	>CRR
Positive sample results	J	J	J
Non-detected results	R	A	A

2. If any compound does not meet the RPD criteria, flag positive results for that compound as estimated (J).

A separate worksheet should be used for each MS/MSD pair.

VII B. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (Section 2)

2. Matrix Spike Duplicate - Unspiked Compounds

TR Nos. AY742MS , AY742MSD

List the concentrations of the unspiked compounds and determine the percent RSD's of the unspiked sample, matrix spike, and matrix spike duplicate. No limits have been developed for the RSD values of the unspiked compounds.

FRACTION	COMPOUND	SAMPLE, MS, MSD CONC.	%RSD
BNA	Benzo(b)fluoranthene	330, 760, 680 ug/Kg	39%
BNA	Benzo(k)fluoranthene	390, 570, 450 ug/Kg	20%
BNA	Benzo(a)fluoranthene	300, 460, 380 ug/Kg	21%

The reviewer must use professional judgement to determine if there is a need to qualify any of the unspiked compounds in the sample.

VII B. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (Section 2)

2. Matrix Spike Duplicate - Unspiked Compounds

TR Nos. AY743MS , AY743MSD

List the concentrations of the unspiked compounds and determine the percent RSD's of the unspiked sample, matrix spike, and matrix spike duplicate. No limits have been developed for the RSD values of the unspiked compounds.

FRACTION	COMPOUND	SAMPLE, MS, MSD CONC.	%RSD
VOA	1,1,1-Trichloroethane	1500, 1200, 1200 ug/Kg	13%
VOA	Tetrachloroethene	11000, 11000, 13000, ug/Kg	10%
VOA	Ethylbenzene	73000, 73000, 79000 ug/Kg	5%
VOA	Xylene (total)	250000, 260000, 270000 ug/Kg	3%

The reviewer must use professional judgement to determine if there is a need to qualify any of the unspiked compounds in the sample.

VII B. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (Section 2)

2. Matrix Spike Duplicate - Unspiked Compounds

TR Nos. AY745MS , AY745MSD

List the concentrations of the unspiked compounds and determine the percent RSD's of the unspiked sample, matrix spike, and matrix spike duplicate. No limits have been developed for the RSD values of the unspiked compounds.

FRACTION	COMPOUND	SAMPLE, MS, MSD CONC.	%RSD
PEST	Aroclor 1254	800, 530, 450 ug/Kg	31%

The reviewer must use professional judgement to determine if there is a need to qualify any of the unspiked compounds in the sample.

VII B. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (Section 2)

2. Matrix Spike Duplicate - Unspiked Compounds

TR Nos. AY748MS , AY748MSD

List the concentrations of the unspiked compounds and determine the percent RSD's of the unspiked sample, matrix spike, and matrix spike duplicate. No limits have been developed for the RSD values of the unspiked compounds.

FRACTION	COMPOUND	SAMPLE, MS, MSD CONC.	%RSD
VOA	Vinyl Chloride	4, 10 U, 10 U ug/L	173%

The reviewer must use professional judgement to determine if there is a need to qualify any of the unspiked compounds in the sample.

VIII. FIELD DUPLICATE PRECISION

TR Nos. AY743 , AY744 Matrix: Soil

List the concentrations of the compounds which do not meet the following RPD criteria:

1. An RPD of <30% for water duplicates.
2. An RPD of <50% for soil duplicates.

FRACTION	COMPOUND	SAMPLE CONC.	DUP SAMPLE CONC.	RPD
VOA	1,1,1-Trichloroethane	1500 ug/Kg	67000 U ug/Kg	200%
VOA	Trichloroethene	410 ug/Kg	67000 U ug/Kg	200%
VOA	Benzene	660 ug/Kg	67000 U ug/Kg	200%
VOA	Tetrachloroethene	11000 ug/Kg	67000 U ug/Kg	200%
VOA	Toluene	7400000 ug/Kg	4100000 ug/Kg	57%
BNA	2-Nitroaniline	3300 U ug/Kg	660 ug/Kg	200%
BNA	Phenol	690 U ug/Kg	290 ug/Kg	200%
BNA	Phenanthrene	690 U ug/Kg	240 ug/Kg	200%
BNA	Fluoranthene	690 U ug/Kg	330 ug/Kg	200%
BNA	Pyrene	690 U ug/Kg	210 ug/Kg	200%
BNA	Benzo(a)anthracene	690 U ug/Kg	180 ug/Kg	200%
BNA	Chrysene	690 U ug/Kg	220 ug/Kg	200%
BNA	Benzo(b)fluoranthene	690 U ug/Kg	240 ug/Kg	200%
BNA	Benzo(k)fluoranthene	690 U ug/Kg	240 ug/Kg	200%
BNA	Benzo(a)pyrene	690 U ug/Kg	250 ug/Kg	200%
Pest	Aroclor-1254	2500 U ug/Kg	3700 ug/Kg	200%

ACTIONS:

1. If the results for any compounds do not meet the RPD criteria, flag the positive results for that compound as estimated.
2. If one value is non-detected, and one is above the CRQL:
   a. Flag the positive result as estimated (J).
   b. Flag the non-detected result as estimated (UJ).

NOTE: Professional judgement may be utilized to apply duplicate actions to all samples of a similar matrix.

A separate worksheet should be filled out for each field duplicate pair.

VIII. FIELD DUPLICATE PRECISION

TR Nos. AY746 , AY747 Matrix: Water

List the concentrations of the compounds which do not meet the following RPD criteria:

1. An RPD of <30% for water duplicates.
2. An RPD of <50% for soil duplicates.

FRACTION	COMPOUND	SAMPLE CONC.	DUP SAMPLE CONC.	RPD
VOA	Xylene (total)	1000 U ug/L	340 ug/L	200%
BNA	Phenol	24 ug/L	34 ug/L	34%
BNA	2-Chlorophenol	71 ug/L	100 ug/L	34%
Pest	Heptachlor	0.058 ug/L	0.050 U ug/L	200%

ACTIONS:

1. If the results for any compounds do not meet the RPD criteria, flag the positive results for that compound as estimated.

2. If one value is non-detected, and one is above the CRQL:
   a. Flag the positive result as estimated (J).
   b. Flag the non-detected result as estimated (UJ).

NOTE: Professional judgement may be utilized to apply duplicate actions to all samples of a similar matrix.

A separate worksheet should be filled out for each field duplicate pair.

IX. INTERNAL STANDARD PERFORMANCE

List the internal standard areas of samples which do not meet the criteria of +100% or -50% of the internal standard area in the associated continuing calibration standard.

SAMPLE ID	DATE	IS OUT	IS AREA/ RT	ACCEPTABLE RANGE	ACTION
None					

ACTION:

1. If an IS area count is outside the criteria -50% or +100% of the associated standard:
   a. Positive results for compounds quantitated using that IS are flagged as estimated (J) for that sample fraction.
   b. Non-detects for compounds quantitated using that IS are flagged as estimated (UJ) for that sample fraction.
   c. If extremely low area counts are reported, or if performance exhibits a major drop-off, then a severe loss of sensitivity is indicated. Non-detects should then be flagged as unusable (R).

2. If an IS retention time varies more than 30 seconds, the chromatographic profile for that sample must be examined to determine if any false positives or negatives exist. For shifts of a large magnitude, the reviewer may consider partial or total rejection of the data for that sample fraction.

X A. PESTICIDE INSTRUMENT PERFORMANCE (Section 1)

1. DDT Retention Time

List the DDT standards which have a retention time (RT) of less than 12 minutes on the packed column (except OV-1 or OV-101).

STANDARD ID	DATE/ TIME	RT	SAMPLES AFFECTED	ACTIONS
None				

ACTION:

If the RT is less than 12 minutes, examine the chromatography to evaluate the separation. If adequate separation is not achieved, flag all affected compound data as unusable (R).

X B. PESTICIDE INSTRUMENT PERFORMANCE (Section 2)

2. Retention Time Windows

List the compounds which are not within the established windows.

COMPOUND	DATE (TIME)	RT	RT WINDOW	SAMPLES AFFECTED
None				

Check the sample chromatograms of the samples analyzed after the last in control standard for peaks within an expanded window. If no peaks are present, there is usually no effect on the data. Refer to Regional guidelines for information on qualifying data if peaks are present. If peaks are present, discuss actions below:

X C. PESTICIDE INSTRUMENT PERFORMANCE (Section 3)

3. DDT and Endrin Degradation

List the standards which have a DDT or Endrin breakdown of greater than 20%.

STANDARD ID	DDT OR ENDRIN	PERCENT BREAKDOWN	SAMPLES AFFECTED	DDD, DDE OR ENDRIN KETONE PRESENT
None				

If the percent breakdown for DDT is greater than 20%:

1. Flag all positive results for DDT as estimated (J) for all samples following the last in control standard. If no DDT was present, but DDD and/or DDE are positive, then flag the quantitation limit for DDT as unusable (R).

2. Flag all positive results for DDD and/or DDE as estimated (J).

If the percent breakdown for Endrin is greater than 20%:

1. Flag all positive results for endrin as estimated (J) for all samples following the last in control standard. If no endrin was detected, but endrin aldehyde and/or endrin ketone are positive, flag the quantitation limit for endrin as unusable (R).

2. Flag all positive results for endrin ketone as estimated (J).

X D. PESTICIDE INSTRUMENT PERFORMANCE (Section 4)

4. DBC Retention Time Check

List the percent difference for the DBC shift greater than 2% for packed columns, greater than 1.5% for wide-bore capillary columns, or greater than 0.3% for narrow-bore capillary columns.

TR #'S	DBC %DIFFERENCE	ACTIONS
None		

If the DBC does not meet the retention time criteria, the analysis may be flagged as unusable (R) for the affected samples, but qualification of the data is left up to the professional judgement of the reviewer. Discuss any qualification of the data below:

XI A. PESTICIDE CALIBRATION (Sections 1 and 2)

1. Initial Calibration

List the compounds which did not meet the Relative Standard Deviation (RSD) criteria of less than 10% for the initial calibration on the quantitation column.

DATE	COMPOUND	%RSD	COLUMN	SAMPLES AFFECTED
12/13/90	4,4'-DDT	17.6	Primary	None

Flag all associated positive results as estimated (J) for samples which did not meet the %RSD criteria.

2. Analytical Sequence

Did the laboratory follow the correct 72 hour sequence described in the SOW? Yes

If No,

The data may be affected. The data reviewer must use professional judgement to determine the severity of the effect and qualify the data accordingly. Discuss any actions below:

XI B. PESTICIDE CALIBRATION (Section 3)

3. Continuing Calibration

List the compounds which did not meet the percent difference (%D) criteria of <15% on the quantitation column or <20% on the confirmation for the continuing calibration.

DATE	COMPOUND	%D	COLUMN	SAMPLES AFFECTED
12/15/90	gamma-BHC	56.1	Quantitation	None
12/15/90	Heptachlor	54.6	Quantitation	AY746
12/15/90	Aldrin	63.3	Quantitation	None
12/15/90	Heptachlor Epoxide	56.9	Quantitation	AY746, AY747
12/15/90	Endosulfan I	56.6	Quantitation	None
12/15/90	Dieldrin	58.5	Quantitation	None
12/15/90	Endosulfan II	61.1	Quantitation	None
12/15/90	4,4'-DDT	99.9	Quantitation	None
12/15/90	Methoxychlor	99.9	Quantitation	None
12/15/90	alpha-BHC	51.1	Quantitation	None
12/15/90	beta-BHC	59.0	Quantitation	AY746, AY747
12/15/90	delta-BHC	58.7	Quantitation	None
12/15/90	Aldrin	50.4	Quantitation	None
12/15/90	4,4'-DDE	58.0	Quantitation	None
12/15/90	Endrin	61.1	Quantitation	None
12/15/90	4,4'-DDD	60.2	Quantitation	None
12/15/90	Endosulfan Sulfate	72.2	Quantitation	None
12/15/90	Endrin Ketone	68.0	Quantitation	AY746, AY747
12/15/90	alpha-Chlordane	57.0	Quantitation	None
12/15/90	gamma-Chlordane	54.4	Quantitation	None

If the %D criteria is not met, flag all associated positive results as estimated (J).

XI B. PESTICIDE CALIBRATION (Section 3)

3. Continuing Calibration

List the compounds which did not meet the percent difference (%D) criteria of <15% on the quantitation column or <20% on the confirmation for the continuing calibration.

DATE	COMPOUND	%D	COLUMN	SAMPLES AFFECTED
12/15/90	gamma-BHC	93.1	Confirmation	None
12/15/90	Heptachlor	84.7	Confirmation	None
12/15/90	Aldrin	85.2	Confirmation	None
12/15/90	Heptachlor Epoxide	75.6	Confirmation	AY746, AY747
12/15/90	Endosulfan I	76.5	Confirmation	None
12/15/90	Dieldrin	81.1	Confirmation	None
12/15/90	Endosulfan II	77.2	Confirmation	None
12/15/90	4,4'-DDT	94.7	Confirmation	None
12/15/90	Methoxychlor	88.2	Confirmation	None
12/15/90	alpha-BHC	99.9	Confirmation	None
12/15/90	beta-BHC	71.0	Confirmation	AY746, AY747
12/15/90	delta-BHD	76.9	Confirmation	None
12/15/90	Aldrin	66.7	Confirmation	None
12/15/90	4,4'-DDE	73.8	Confirmation	None
12/15/90	Endrin	77.0	Confirmation	None
12/15/90	4,4'-DDD	73.1	Confirmation	None
12/15/90	Endosulfan Sulfate	76.2	Confirmation	None
12/15/90	Endrin Ketone	58.1	Confirmation	AY746, AY747
12/15/90	alpha-Chlordane	48.0	Confirmation	None
12/15/90	gamma-Chlordane	68.9	Confirmation	None

If the %D criteria is not met, flag all associated positive results as estimated (J).

XI B. PESTICIDE CALIBRATION (Section 3)

3. Continuing Calibration

List the compounds which did not meet the percent difference (%D) criteria of <15% on the quantitation column or <20% on the confirmation for the continuing calibration.

DATE	COMPOUND	%D	COLUMN	SAMPLES AFFECTED
12/21/90	gamma-BHC	78.4	Quantitation	None
12/21/90	Heptachlor	71.3	Quantitation	None
12/21/90	Aldrin	76.9	Quantitation	None
12/21/90	Heptachlor Epoxide	71.8	Quantitation	None
12/21/90	Endosulfan I	72.2	Quantitation	None
12/21/90	Dieldrin	72.9	Quantitation	None
12/21/90	Endosulfan II	69.6	Quantitation	None
12/21/90	4,4'-DDT	69.8	Quantitation	None
12/21/90	Methoxychlor	58.8	Quantitation	None
12/21/90	alpha-BHC	65.9	Quantitation	None
12/21/90	beta-BHC	65.5	Quantitation	None
12/21/90	delta-BHC	69.1	Quantitation	None
12/21/90	Aldrin	68.0	Quantitation	None
12/21/90	4,4'-DDE	67.1	Quantitation	None
12/21/90	Endrin	66.1	Quantitation	None
12/21/90	4,4'-DDD	64.3	Quantitation	None
12/21/90	Endosulfan Sulfate	57.6	Quantitation	None
12/21/90	Endrin Ketone	59.2	Quantitation	None
12/21/90	alpha-Chlordane	64.3	Quantitation	None
12/21/90	gamma-Chlordane	63.8	Quantitation	None

If the %D criteria is not met, flag all associated positive results as estimated (J).

XI B. PESTICIDE CALIBRATION (Section 3)

3. Continuing Calibration

List the compounds which did not meet the percent difference (%D) criteria of <15% on the quantitation column or <20% on the confirmation for the continuing calibration.

DATE	COMPOUND	%D	COLUMN	SAMPLES AFFECTED
12/21/90	gamma-BHC	53.3	Confirmation	None
12/21/90	Heptachlor	51.1	Confirmation	None
12/21/90	Aldrin	61.8	Confirmation	None
12/21/90	Heptachlor Epoxide	46.9	Confirmation	None
12/21/90	Endosulfan I	46.4	Confirmation	None
12/21/90	Dieldrin	50.0	Confirmation	None
12/21/90	Endosulfan II	48.9	Confirmation	None
12/21/90	4,4'-DDT	70.4	Confirmation	None
12/21/90	Methoxychlor	55.7	Confirmation	None
12/21/90	alpha-BHC	52.9	Confirmation	None
12/21/90	beta-BHC	61.5	Confirmation	None
12/21/90	delta-BHC	71.6	Confirmation	None
12/21/90	Aldrin	54.9	Confirmation	None
12/21/90	4,4'-DDE	63.3	Confirmation	None
12/21/90	Endrin	59.8	Confirmation	None
12/21/90	4,4'-DDD	69.6	Confirmation	None
12/21/90	Endosulfan Sulfate	60.6	Confirmation	None
12/21/90	Endrin Ketone	64.5	Confirmation	None
12/21/90	alpha-Chlordane	55.8	Confirmation	None
12/21/90	gamma-Chlordane	55.6	Confirmation	None

If the %D criteria is not met, flag all associated positive results as estimated (J).

XI B. PESTICIDE CALIBRATION (Section 3)

3. Continuing Calibration

List the compounds which did not meet the percent difference (%D) criteria of <15% on the quantitation column or <20% on the confirmation for the continuing calibration.

DATE	COMPOUND	%D	COLUMN	SAMPLES AFFECTED
12/28/90	gamma-BHC	19.8	Quantitation	None
12/28/90	Heptachlor	21.2	Quantitation	None
12/28/90	Aldrin	17.0	Quantitation	None
12/28/90	Heptachlor Epoxide	16.7	Quantitation	None
12/28/90	beta-BHC	27.8	Quantitation	None
12/28/90	gamma-Chlordane	15.2	Quantitation	None

If the %D criteria is not met, flag all associated positive results as estimated (J).

XII. SAMPLE QUANTITATION

In the space below, please show a minimum of one sample calculation per fraction:

VOA:

AY745 Toluene

$$\frac{116312}{87322} \times \frac{50}{0.806 \times 0.94} = 87.9 \text{ ug/Kg}$$

BNA:

AY744 Chrysene

$$\frac{2862 \times 40 \text{ ng/ul} \times 1000 \text{ ul}}{35097 \times 1.134 \times 30 \text{ g} \times 0.93} \times 2 \times 1.0526 = 217$$

PEST/PCB:

AY746 Heptachlor

$$\frac{47062}{81524} \times \frac{0.010 \text{ ng std}}{1.0 \text{ ul injected}} \times \frac{10{,}000 \text{ ul}}{1000 \text{ ml}} = 0.058 \text{ ug/L}$$

CLP VOLATILE ORGANIC ANALYSIS
CASE NO. 15474 SDG NO. AY742
SOIL ANALYTICAL RESULTS

Sample Location	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy				
Sample Number								
Traffic Report Number	AY742	AY743	AY744	AY745				
Remarks		Medium Level	100X Dil. Medium Level					
Sampling Date	12/06/90	12/06/90	12/06/90	12/06/90				
Analysis Date	12/11/90	12/12/90	12/12/90	12/11/90				
VOLATILE ORGANIC COMPOUND	ug/Kg	ug/Kg	ug/Kg	ug/Kg				
Chloromethane								
Bromomethane								
Vinyl Chloride								
Chloroethane								
Methylene Chloride								
Acetone								
Carbon Disulfide								
1,1-Dichloroethene								
1,1-Dichloroethane								
1,2-Dichloroethene (Total)								
Chloroform								
1,2-Dichloroethane								
2-Butanone								
1,1,1-Trichloroethane		1500 J						
Carbon Tetrachloride								
Vinyl Acetate								
Bromodichloromethane								
1,2-Dichloropropane								
cis-1,3-Dichloropropene								
Trichloroethene		410 J						
Dibromochloromethane								
1,1,2-Trichloroethane								
Benzene		660 J						
trans-1,3-Dichloropropene								
Bromoform								
4-Methyl-2-pentanone								
2-Hexanone								
Tetrachloroethene		11000 J						
1,1,2,2-Tetrachloroethane								
Toluene		7400000 J*	4100000 J*	88				
Chlorobenzene								
Ethylbenzene		77000 J*	58000 J					
Styrene								
Xylene (Total)		280000 J*	200000 J	7				

A blank space indicates the compound was not detected.

J Quantitation is approximate due to limitations identified during the quality control review.

R Value is rejected.

* Result obtained from dilution.

CLP VOLATILE ORGANIC ANALYSIS
CASE NO. 15474 SDG NO. AY742
SOIL QUANTITATION LIMITS

Sample Location	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy				
Sample Number								
Traffic Report Number	AY742	AY743	AY744	AY745				
Remarks			100X Dil.					
Percent Solids	94%	96% Medium Level	93% Medium Level	94%				
VOLATILE ORGANIC COMPOUND	ug/Kg	ug/Kg	ug/Kg	ug/Kg				
Chloromethane	11	1300	130000 UJ	11				
Bromomethane	11	1300	130000 UJ	11				
Vinyl Chloride	11	1300	130000 UJ	11				
Chloroethane	11	1300	130000 UJ	11				
Methylene Chloride	38 UJ	3000 U	320000 UJ	49 UJ				
Acetone	26 U	2700 U	240000 UJ	17 U				
Carbon Disulfide	5	650	67000 UJ	5				
1,1-Dichloroethene	5	650	67000 UJ	5				
1,1-Dichloroethane	5	650	67000 UJ	5				
1,2-Dichloroethene (Total)	5	650	67000 UJ	5				
Chloroform	5	650	67000 UJ	5				
1,2-Dichloroethane	5	650	67000 UJ	5				
2-Butanone	11	1300 R	130000 R	11				
1,1,1-Trichloroethane	5	650	67000 UJ	5				
Carbon Tetrachloride	5	650	67000 UJ	5				
Vinyl Acetate	11	1300 UJ	130000 UJ	11				
Bromodichloromethane	5	650	67000 UJ	5				
1,2-Dichloropropane	5	650	67000 UJ	5				
cis-1,3-Dichloropropene	5	650	67000 UJ	5				
Trichloroethene	5	650	67000 UJ	5				
Dibromochloromethane	5	650	67000 UJ	5				
1,1,2-Trichloroethane	5	650	67000 UJ	5				
Benzene	5	650	67000 UJ	5				
trans-1,3-Dichloropropene	5	650	67000 UJ	5				
Bromoform	5	650	67000 UJ	5				
4-Methyl-2-pentanone	11	1300 UJ	130000 UJ	11				
2-Hexanone	11	1300 R	130000 R	11				
Tetrachloroethene	5	650	67000 UJ	5				
1,1,2,2-Tetrachloroethane	5	650	67000 UJ	5				
Toluene	5	650	67000	5				
Chlorobenzene	5	650	67000 UJ	5				
Ethylbenzene	5	650	67000	5				
Styrene	5	650	67000 UJ	5				
Xylene (Total)	5	650	67000	5				

UJ Quantitation limit is approximate due to limitations during the quality control review.
R Value is rejected.

CLP VOLATILE ORGANIC ANALYSIS

CASE NO. 15474 SDG NO. AY742

WATER ANALYTICAL RESULTS

Sample Location	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy				
Sample Number								
Traffic Report Number	AY741	AY746	AY747	AY748				
Remarks	Rinsate	200X Dil.	100X Dil.					
Sampling Date	12/05/90	12/06/90	12/06/90	12/06/90				
Analysis Date	12/20/90	12/17/90	12/17/90	12/15/90				
VOLATILE ORGANIC COMPOUND	ug/L	ug/L	ug/L	ug/L				
Chloromethane								
Bromomethane								
Vinyl Chloride				4 J				
Chloroethane								
Methylene Chloride	3 J							
Acetone	17 J							
Carbon Disulfide								
1,1-Dichloroethene								
1,1-Dichloroethane								
1,2-Dichloroethene (Total)								
Chloroform								
1,2-Dichloroethane								
2-Butanone								
1,1,1-Trichloroethane								
Carbon Tetrachloride								
Vinyl Acetate								
Bromodichloromethane								
1,2-Dichloropropane								
cis-1,3-Dichloropropene								
Trichloroethene								
Dibromochloromethane								
1,1,2-Trichloroethane								
Benzene								
trans-1,3-Dichloropropene								
Bromoform								
4-Methyl-2-pentanone								
2-Hexanone								
Tetrachloroethene								
1,1,2,2-Tetrachloroethane								
Toluene								
Chlorobenzene		20000	19000					
Ethylbenzene								
Styrene								
Xylene (Total)			340 J					

A blank space indicates the compound was not detected.

J Quantitation is approximate due to limitations identified during the quality control review.

R Value is rejected.

CLP VOLATILE ORGANIC ANALYSIS

CASE NO. 15474 SDG NO. AY742

WATER QUANTITATION LIMITS

Sample Location	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy				
Sample Number								
Traffic Report Number	AY741	AY746	AY747	AY748				
Remarks	Rinsate	200X Dil.	100X Dil.					
VOLATILE ORGANIC COMPOUND	ug/L	ug/L	ug/L	ug/L				
Chloromethane	10 UJ	2000	1000	10				
Bromomethane	10 UJ	2000	1000	10				
Vinyl Chloride	10 UJ	2000	1000	10				
Chloroethane	10 UJ	2000	1000	10				
Methylene Chloride	5	2900 U	2500 U	14 U				
Acetone	10	2000 U	1000 U	10				
Carbon Disulfide	5 UJ	1000	500	5				
1,1-Dichloroethene	5 UJ	1000	500	5				
1,1-Dichloroethane	5 UJ	1000	500	5				
1,2-Dichloroethene (Total)	5 UJ	1000	500	5				
Chloroform	5 UJ	1000	500	5				
1,2-Dichloroethane	5 UJ	1000	500	5				
2-Butanone	10 UJ	2000 R	1000 R	10				
1,1,1-Trichloroethane	5 UJ	1000	500	5				
Carbon Tetrachloride	5 UJ	1000	500	5				
Vinyl Acetate	10 UJ	2000	1000	10				
Bromodichloromethane	5 UJ	1000	500	5				
1,2-Dichloropropane	5 UJ	1000	500	5				
cis-1,3-Dichloropropene	5 UJ	1000	500	5				
Trichloroethene	5 UJ	1000	500	5				
Dibromochloromethane	5 UJ	1000	500	5				
1,1,2-Trichloroethane	5 UJ	1000	500	5				
Benzene	5 UJ	1000	500	5				
trans-1,3-Dichloropropene	5 UJ	1000	500	5				
Bromoform	5 UJ	1000	500	5				
4-Methyl-2-pentanone	10 UJ	2000	1000	10 UJ				
2-Hexanone	10 UJ	2000	1000	10 UJ				
Tetrachloroethene	5 UJ	1000	500	5				
1,1,2,2-Tetrachloroethane	5 UJ	1000	500	5				
Toluene	5 UJ	1000	500	5				
Chlorobenzene	5 UJ	1000	500	5				
Ethylbenzene	5 UJ	1000 U	500 U	5 U				
Styrene	5 UJ	1000	500	5				
Xylene (Total)	5 UJ	1000	500	5				

UJ Quantitation limit is approximate due to limitations during the quality control review.

R Value is rejected.

CLP EXTRACTABLE ORGANIC ANALYSIS
CASE NO. 15474 SDG NO. AY742
SOIL ANALYTICAL RESULTS

Sample Location	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy				
Sample Number								
Traffic Report Number	AY742	AY743	AY744	AY745				
Remarks								
Sampling Date	12/06/90	12/06/90	12/06/90	12/06/90				
Extraction Date	12/11/90	12/11/90	12/11/90	12/11/90				
Analysis Date	12/19/90	12/19/90	12/27/90	12/19/90				
SEMI-VOLATILE COMPOUND	ug/Kg	ug/Kg	ug/Kg	ug/Kg				
Phenol			290 J					
bis (2-Chloroethyl) ether								
2-Chlorophenol								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
Benzyl Alcohol								
1,2-Dichlorobenzene								
2-Methylphenol								
bis (2-Chloroisopropyl)ether								
4-Methylphenol								
N-Nitroso-di-n-propylamine								
Hexachloroethane								
Nitrobenzene								
Isophorone								
2-Nitrophenol								
2,4-Dimethylphenol								
Benzoic acid								
bis (2-Chloroethoxy) methane								
2,4-Dichlorophenol		2500	3300					
1,2,4-Trichlorobenzene		680 J	680 J					
Naphthalene		280 J	250 J					
4-Chloroaniline								
Hexachlorobutadiene								
4-Chloro-3-methylphenol								
2-Methylnaphthalene								
Hexachlorocyclopentadiene								
2,4,6-Trichlorophenol								
2,4,5-Trichlorophenol								
2-Chloronaphthalene								
2-Nitroaniline			660 J					
Dimethylphthalate								
Acenaphthylene								
2,6-Dinitrotoluene								

CLP EXTRACTABLE ORGANIC ANALYSIS
CASE NO. 15474 SDG NO. AY742
SOIL ANALYTICAL RESULTS

Sample Location	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy				
Sample Number								
Traffic Report Number	AY742	AY743	AY744	AY745				
Remarks								
SEMI-VOLATILE COMPOUND	ug/Kg	ug/Kg	ug/Kg	ug/Kg				
3-Nitroaniline								
Acenaphthene								
2,4-Dinitrophenol								
4-Nitrophenol								
Dibenzofuran								
2,4-Dinitrotoluene								
Diethylphthalate								
4-Chlorophenyl-phenylether								
Fluorene								
4-Nitroaniline								
4,6-Dinitro-2-methylphenol								
N-Nitrosodiphenylamine								
4-Bromophenyl-phenylether								
Hexachlorobenzene								
Pentachlorophenol								
Phenanthrene			240 J					
Anthracene								
Di-n-butylphthalate								
Fluoranthene			330 J					
Pyrene			210 J					
Butylbenzylphthalate								
3,3'-Dichlorobenzidine								
Benzo(a)anthracene			180 J					
Chrysene			220 J					
bis(2-Ethylhexyl)phthalate								
Di-n-octyl phthalate								
Benzo(b)fluoranthene	330 J		240 J					
Benzo(k)fluoranthene	390 J		240 J					
Benzo(a)pyrene	300 J		250 J					
Indeno (1,2,3-cd)pyrene								
Dibenz(a,h)anthracene								
Benzo(g,h,i)perylene								

A blank space indicates the compound was not detected.

J Quantitation is approximate due to limitations identified during the quality control review.

R Value is rejected.

CLP EXTRACTABLE ORGANIC ANALYSIS
CASE NO. 15474 SDG NO. AY742
SOIL QUANTITATION LIMITS

Sample Location	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy				
Sample Number								
Traffic Report Number	AY742	AY743	AY744	AY745				
Remarks								
Percent Solids	94%	96%	93%	94%				
SEMI-VOLATILE COMPOUND	ug/Kg	ug/Kg	ug/Kg	ug/Kg				
Phenol	710	690	710	700				
bis (2-Chloroethyl) ether	710	690	710	700				
2-Chlorophenol	710	690	710	700				
1,3-Dichlorobenzene	710	690	710	700				
1,4-Dichlorobenzene	710	690	710	700				
Benzyl Alcohol	710	690	710	700				
1,2-Dichlorobenzene	710	690	710	700				
2-Methylphenol	710	690	710	700				
bis (2-Chloroisopropyl)ether	710	690	710	700				
4-Methylphenol	710	690	710	700				
N-Nitroso-di-n-propylamine	710	690	710	700				
Hexachloroethane	710	690	710	700				
Nitrobenzene	710	690	710	700				
Isophorone	710	690	710	700				
2-Nitrophenol	710	690	710	700				
2,4-Dimethylphenol	710	690	710	700				
Benzoic acid	3400 UJ	3300 UJ	3400	3400 UJ				
bis (2-Chloroethoxy) methane	710	690	710	700				
2,4-Dichlorophenol	710	690	710	700				
1,2,4-Trichlorobenzene	710	690	710	700				
Naphthalene	710	690	710	700				
4-Chloroaniline	710	690	710	700				
Hexachlorobutadiene	710	690	710	700				
4-Chloro-3-methylphenol	710	690	710	700				
2-Methylnaphthalene	710	690	710	700				
Hexachlorocyclopentadiene	710	690	710	700				
2,4,6-Trichlorophenol	710	690	710	700				
2,4,5-Trichlorophenol	3400	3300	3400	3400				
2-Chloronaphthalene	710	690	710	700				
2-Nitroaniline	3400	3300	3400	3400				
Dimethylphthalate	710	690	710	700				
Acenaphthylene	710	690	710	700				
2,6-Dinitrotoluene	710	690	710	700				

UJ Quantitation limit is approximate due to limitations identified during the quality control review.
R Value is rejected.

CLP EXTRACTABLE ORGANIC ANALYSIS
CASE NO. 15474 SDG NO. AY742
SOIL QUANTITATION LIMITS

Sample Location	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy				
Sample Number								
Traffic Report Number	AY742	AY743	AY744	AY745				
Remarks								
SEMI-VOLATILE COMPOUND	ug/Kg	ug/Kg	ug/Kg	ug/Kg				
3-Nitroaniline	3400	3300	3400	3400				
Acenaphthene	710	690	710	700				
2,4-Dinitrophenol	3400	3300	3400	3400				
4-Nitrophenol	3400	3300	3400	3400				
Dibenzofuran	710	690	710	700				
2,4-Dinitrotoluene	710	690	710	700				
Diethylphthalate	710	690	710	700				
4-Chlorophenyl-phenylether	710	690	710	700				
Fluorene	710	690	710	700				
4-Nitroaniline	3400	3300	3400	3400				
4,6-Dinitro-2-methylphenol	3400	3300	3400	3400				
N-Nitrosodiphenylamine	710	690	710	700				
4-Bromophenyl-phenylether	710	690	710	700				
Hexachlorobenzene	710	690	710	700				
Pentachlorophenol	3400	3300	3400	3400				
Phenanthrene	710	690	710	700				
Anthracene	710	690	710	700				
Di-n-butylphthalate	710	690	710	700				
Fluoranthene	710	690	710	700				
Pyrene	710	690	710	700				
Butylbenzylphthalate	710	690	710	700				
3,3'-Dichlorobenzidine	1400	1400	1400	1400				
Benzo(a)anthracene	710	690	710	700				
Chrysene	710	690	710	700				
bis(2-Ethylhexyl)phthalate	710	690	710 U	700				
Di-n-octyl phthalate	710	690	710	700				
Benzo(b)fluoranthene	710	690	710	700				
Benzo(k)fluoranthene	710	690	710	700				
Benzo(a)pyrene	710	690	710	700				
Indeno (1,2,3-cd)pyrene	710	690	710	700				
Dibenz(a,h)anthracene	710	690	710	700				
Benzo(g,h,i)perylene	710	690	710	700				

UJ Quantitation limit is approximate due to limitations identified during the quality control review.
R Value is rejected.

CLP EXTRACTABLE ORGANIC ANALYSIS

CASE NO. 15474 SDG NO. AY742

WATER ANALYTICAL RESULTS

Sample Location	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy				
Sample Number								
Traffic Report Number	AY741	AY746	AY747	AY748				
Remarks	Rinsate							
Sampling Date	12/05/90	12/06/90	12/06/90	12/06/90				
Extraction Date	12/11/90	12/11/90	12/11/90	12/11/90				
Analysis Date	12/13/90	12/13/90	12/13/90	12/13/90				
SEMI-VOLATILE COMPOUND	ug/L	ug/L	ug/L	ug/L				
Phenol		24 J	34 J					
bis (2-Chloroethyl) ether								
2-Chlorophenol		71 J	100 J					
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
Benzyl Alcohol								
1,2-Dichlorobenzene								
2-Methylphenol								
bis (2-Chloroisopropyl)ether								
4-Methylphenol								
N-Nitroso-di-n-propylamine								
Hexachloroethane								
Nitrobenzene								
Isophorone								
2-Nitrophenol								
2,4-Dimethylphenol								
Benzoic acid								
bis (2-Chloroethoxy) methane								
2,4-Dichlorophenol								
1,2,4-Trichlorobenzene								
Naphthalene								
4-Chloroaniline								
Hexachlorobutadiene								
4-Chloro-3-methylphenol								
2-Methylnaphthalene								
Hexachlorocyclopentadiene								
2,4,6-Trichlorophenol								
2,4,5-Trichlorophenol								
2-Chloronaphthalene								
2-Nitroaniline								
Dimethylphthalate								
Acenaphthylene								
2,6-Dinitrotoluene								

CLP EXTRACTABLE ORGANIC ANALYSIS
CASE NO. 15474 SDG NO. AY742
WATER ANALYTICAL RESULTS

Sample Location	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy				
Sample Number								
Traffic Report Number	AY741	AY746	AY747	AY748				
Remarks	Rinsate							
SEMI-VOLATILE COMPOUND	ug/L	ug/L	ug/L	ug/L				
3-Nitroaniline								
Acenaphthene								
2,4-Dinitrophenol								
4-Nitrophenol								
Dibenzofuran								
2,4-Dinitrotoluene								
Diethylphthalate								
4-Chlorophenyl-phenylether								
Fluorene								
4-Nitroaniline								
4,6-Dinitro-2-methylphenol								
N-Nitrosodiphenylamine								
4-Bromophenyl-phenylether								
Hexachlorobenzene								
Pentachlorophenol								
Phenanthrene								
Anthracene								
Di-n-butylphthalate								
Fluoranthene								
Pyrene								
Butylbenzylphthalate								
3,3'-Dichlorobenzidine								
Benzo(a)anthracene								
Chrysene								
bis(2-Ethylhexyl)phthalate	3 J							
Di-n-octyl phthalate								
Benzo(b)fluoranthene								
Benzo(k)fluoranthene								
Benzo(a)pyrene								
Indeno (1,2,3-cd)pyrene								
Dibenz(a,h)anthracene								
Benzo(g,h,i)perylene								

A blank space indicates the compound was not detected.

J Quantitation is approximate due to limitations identified during the quality control review.

R Value is rejected.

CLP EXTRACTABLE ORGANIC ANALYSIS

CASE NO. 15474 SDG NO. AY742

WATER QUANTITATION LIMITS

Sample Location	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy				
Sample Number								
Traffic Report Number	AY741	AY746	AY747	AY748				
Remarks	Rinsate							
SEMI-VOLATILE COMPOUND	ug/L	ug/L	ug/L	ug/L				
Phenol	10	10	10	10 R				
bis (2-Chloroethyl) ether	10	10	10	10				
2-Chlorophenol	10	10	10	10 R				
1,3-Dichlorobenzene	10	10	10	10				
1,4-Dichlorobenzene	10	10	10	10				
Benzyl Alcohol	10	10	10	10 R				
1,2-Dichlorobenzene	10	10	10	10				
2-Methylphenol	10	10	10	10 R				
bis (2-Chloroisopropyl)ether	10	10	10	10				
4-Methylphenol	10	10	10	10 R				
N-Nitroso-di-n-propylamine	10	10	10	10				
Hexachloroethane	10	10	10	10				
Nitrobenzene	10	10	10	10				
Isophorone	10	10	10	10				
2-Nitrophenol	10	10	10	10 R				
2,4-Dimethylphenol	10	10	10	10 R				
Benzoic acid	50	50	50	50 R				
bis (2-Chloroethoxy) methane	10	10	10	10				
2,4-Dichlorophenol	10	10	10	10 R				
1,2,4-Trichlorobenzene	10	10	10	10				
Naphthalene	10	10	10	10				
4-Chloroaniline	10	10	10	10				
Hexachlorobutadiene	10	10	10	10				
4-Chloro-3-methylphenol	10	10	10	10 R				
2-Methylnaphthalene	10	10	10	10				
Hexachlorocyclopentadiene	10	10	10	10				
2,4,6-Trichlorophenol	10	10	10	10 R				
2,4,5-Trichlorophenol	50	50	50	50 R				
2-Chloronaphthalene	10	10	10	10				
2-Nitroaniline	50	50	50	50				
Dimethylphthalate	10	10	10	10				
Acenaphthylene	10	10	10	10				
2,6-Dinitrotoluene	10	10	10	10				

CLP EXTRACTABLE ORGANIC ANALYSIS
CASE NO. 15474 SDG NO. AY742
WATER QUANTITATION LIMITS

Sample Location	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy				
Sample Number								
Traffic Report Number	AY741	AY746	AY747	AY748				
Remarks	Rinsate							
SEMI-VOLATILE COMPOUND	ug/L	ug/L	ug/L	ug/L				
3-Nitroaniline	50	50	50	50				
Acenaphthene	10	10	10	10				
2,4-Dinitrophenol	50	50	50	50 R				
4-Nitrophenol	50	50	50	50 R				
Dibenzofuran	10	10	10	10				
2,4-Dinitrotoluene	10	10	10	10				
Diethylphthalate	10	10	10	10				
4-Chlorophenyl-phenylether	10	10	10	10				
Fluorene	10	10	10	10				
4-Nitroaniline	50	50	50	50				
4,6-Dinitro-2-methylphenol	50	50	50	50 R				
N-Nitrosodiphenylamine	10	10	10	10				
4-Bromophenyl-phenylether	10	10	10	10				
Hexachlorobenzene	10	10	10	10				
Pentachlorophenol	50	50	50	50 R				
Phenanthrene	10	10	10	10				
Anthracene	10	10	10	10				
Di-n-butylphthalate	10	10	10	10				
Fluoranthene	10	10	10	10				
Pyrene	10	10	10	10				
Butylbenzylphthalate	10	10	10	10				
3,3'-Dichlorobenzidine	20	20	20	20				
Benzo(a)anthracene	10	10	10	10				
Chrysene	10	10	10	10				
bis(2-Ethylhexyl)phthalate	10	10 U	10 U	10				
Di-n-octyl phthalate	10	10	10	10				
Benzo(b)fluoranthene	10	10	10	10				
Benzo(k)fluoranthene	10	10	10	10				
Benzo(a)pyrene	10	10	10	10				
Indeno (1,2,3-cd)pyrene	10	10	10	10				
Dibenz(a,h)anthracene	10	10	10	10				
Benzo(g,h,i)perylene	10	10	10	10				

UJ Quantitation limit is approximate due to limitations identified during the quality control review.
R Value is rejected.

CLP EXTRACTABLE ORGANIC ANALYSIS
CASE NO. 15474 SDG NO. AY742
SOIL ANALYTICAL RESULTS

Sample Location	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy				
Sample Number								
Traffic Report Number	AY742	AY743	AY744	AY745				
Remarks	Medium Level	Medium Level	Dup. AY743 Medium Level					
Sampling Date	12/06/90	12/06/90	12/06/90	12/06/90				
Extraction Date	12/13/90	12/13/90	12/13/90	12/11/90				
Analysis Date	12/19/90	12/20/90	12/20/90	12/28/90				
PESTICIDE/PCB COMPOUND	ug/Kg	ug/Kg	ug/Kg	ug/Kg				
alpha-BHC								
beta-BHC								
delta-BHC								
gamma-BHC (Lindane)								
Heptachlor								
Aldrin								
Heptachlor epoxide								
Endosulfan I								
Dieldrin								
4,4'-DDE								
Endrin								
Endosulfan II								
4,4'-DDD								
Endosulfan sulfate								
4,4'-DDT								
Methoxychlor								
Endrin ketone								
alpha-Chlordane								
gamma-Chlordane								
Toxaphene								
Aroclor-1016								
Aroclor-1221								
Aroclor-1232								
Aroclor-1242								
Aroclor-1248								
Aroclor-1254			3700 J	800 J				
Aroclor-1260								

A blank space indicates the compound was not detected.
J Quantitation is approximate due to limitations identified during the quality control review.
R Value is rejected.

CLP EXTRACTABLE ORGANIC ANALYSIS
CASE NO. 15474 SDG NO. AY742
SOIL QUANTITATION LIMITS

Sample Location	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy				
Sample Number								
Traffic Report Number	AY742	AY743	AY744	AY745				
Remarks			Dup. AY743					
Percent Solids	94% Medium Level	96% Medium Level	93% Medium Level	94%				
PESTICIDE/PCB COMPOUND	ug/Kg	ug/Kg	ug/Kg	ug/Kg				
alpha-BHC	130	130	130	17				
beta-BHC	130	130	130	17				
delta-BHC	130	130	130	17				
gamma-BHC (Lindane)	130	130	130	17				
Heptachlor	130	130	130	17				
Aldrin	130	130	130	17				
Heptachlor epoxide	130	130	130	17				
Endosulfan I	130	130	130	17				
Dieldrin	260	250	260	34				
4,4'-DDE	260	250	260	34				
Endrin	260	250	260	34				
Endosulfan II	260	250	260	34				
4,4'-DDD	260	250	260	34				
Endosulfan sulfate	260	250	260	34				
4,4'-DDT	260	250	260	34				
Methoxychlor	1300	1300	1300	170				
Endrin ketone	260	250	260	34				
alpha-Chlordane	1300	1300	1300	170				
gamma-Chlordane	1300	1300	1300	170				
Toxaphene	2600	2500	2600	340				
Aroclor-1016	1300	1300	1300	170				
Aroclor-1221	1300	1300	1300	170				
Aroclor-1232	1300	1300	1300	170				
Aroclor-1242	1300	1300	1300	170				
Aroclor-1248	1300	1300	1300	170				
Aroclor-1254	2600	2500	2600	340				
Aroclor-1260	2600	2500	2600	340				

UJ Quantitation limit is approximate due to limitations identified during the quality control review.
R Value is rejected.

CLP EXTRACTABLE ORGANIC ANALYSIS
CASE NO. 15474 SDG NO. AY742
WATER ANALYTICAL RESULTS

Sample Location	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy				
Sample Number								
Traffic Report Number	AY741	AY746	AY747	AY748				
Remarks	Rinsate		Dup. AY746					
Sampling Date	12/05/90	12/06/90	12/06/90	12/06/90				
Extraction Date	12/11/90	12/11/90	12/11/90	12/11/90				
Analysis Date	12/15/90	12/14/90	12/15/90	12/15/90				
PESTICIDE/PCB COMPOUND	ug/L	ug/L	ug/L	ug/L				
alpha-BHC								
beta-BHC		0.14 J	0.13 J					
delta-BHC								
gamma-BHC (Lindane)								
Heptachlor		0.058 J						
Aldrin								
Heptachlor epoxide		0.21 J	0.16 J					
Endosulfan I								
Dieldrin								
4,4'-DDE								
Endrin								
Endosulfan II								
4,4'-DDD								
Endosulfan sulfate								
4,4'-DDT								
Methoxychlor								
Endrin ketone		0.18 J	0.14 J					
alpha-Chlordane								
gamma-Chlordane								
Toxaphene								
Aroclor-1016								
Aroclor-1221								
Aroclor-1232								
Aroclor-1242								
Aroclor-1248								
Aroclor-1254								
Aroclor-1260								

A blank space indicates the compound was not detected.
J Quantitation is approximate due to limitations identified during the quality control review.
R Value is rejected.

CLP EXTRACTABLE ORGANIC ANALYSIS
CASE NO. 15474 SDG NO. AY742
WATER QUANTITATION LIMITS

Sample Location	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy	Ciba-Giegy				
Sample Number								
Traffic Report Number	AY741	AY746	AY747	AY748				
Remarks			Dup. AY746					
PESTICIDE/PCB COMPOUND	ug/L	ug/L	ug/L	ug/L				
alpha-BHC	0.050	0.050	0.050	0.050				
beta-BHC	0.050	0.050	0.050	0.050				
delta-BHC	0.050	0.050	0.050	0.050				
gamma-BHC (Lindane)	0.050	0.050	0.050	0.050				
Heptachlor	0.050	0.050	0.050 UJ	0.050				
Aldrin	0.050	0.050	0.050	0.050				
Heptachlor epoxide	0.050	0.050	0.050	0.050				
Endosulfan I	0.050	0.050	0.050	0.050				
Dieldrin	0.10	0.10	0.10	0.10				
4,4'-DDE	0.10	0.10	0.10	0.10				
Endrin	0.10	0.10	0.10	0.10				
Endosulfan II	0.10	0.10	0.10	0.10				
4,4'-DDD	0.10	0.10	0.10	0.10				
Endosulfan sulfate	0.10	0.10	0.10	0.10				
4,4'-DDT	0.10	0.10	0.10	0.10				
Methoxychlor	0.50	0.50	0.50	0.50				
Endrin ketone	0.10	0.10	0.10	0.10				
alpha-Chlordane	0.50	0.50	0.50	0.50				
gamma-Chlordane	0.50	0.50	0.50	0.50				
Toxaphene	1.0	1.0	1.0	1.0				
Aroclor-1016	0.50	0.50	0.50	0.50				
Aroclor-1221	0.50	0.50	0.50	0.50				
Aroclor-1232	0.50	0.50	0.50	0.50				
Aroclor-1242	0.50	0.50	0.50	0.50				
Aroclor-1248	0.50	0.50	0.50	0.50				
Aroclor-1254	1.0	1.0	1.0	1.0				
Aroclor-1260	1.0	1.0	1.0	1.0				

UJ Quantitation limit is approximate due to limitations identified during the quality control review.
R Value is rejected.